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FORMULATING POPULATION POLICY: A CASE STUDY OF THE UNITED STATES

By Rebecca J. Cook*

INTRODUCTION

The objectives of this article are: (1) to describe how population policies are perceived, formulated and implemented in the United States; and (2) to analyze how and why the definition of demographic trends by ten state commissions have a profound impact on how policies are developed and evaluated. Some of the demographic components of policy will be outlined for the law maker and some of the legal components of policy will be described for the demographer.

For the purposes of explanation, four analytical population policy models are developed: (1) the family planning model, (2) the motivation model, (3) the population distribution model, and (4) the per capita consumption model. There is no one correct policy model but rather many policy models have and can be developed based on different social, economic, political and environmental conditions of a state. *The article's principle analytical utility lies in its challenge to state officials to develop their policy model based on the unique conditions and goals of their state.*

A legal systems model outlines the many facets of policy making that should be taken into consideration in helping to determine which kinds of legal change should be used in implementing policy. Since the demographic effectiveness of legal change on a population policy is uncertain or unknown, subjecting alternative pieces of legislation—the “inputs”—to test hypothesizing a desired “output” might help to formulate and choose more effective policies. For example, compare the effectiveness of two pieces of legislation—one requiring the teaching of population education and the other instituting programs to raise the status of women. Determine which legal change would be more functional in implementing a policy of population reduction. The answer depends on many conditions within a

state, some of which could be determined by projecting the probable feedback.

The effectiveness of any institution in implementing policy is determined in part by how well policies are defined and how well institutions are structured. It could be a relatively straight-forward matter to establish effective statutory policy. Most states have developed adequate statutory family planning policies and have created the agencies necessary to implement the family planning objectives. However, they are just beginning to articulate and develop three subsequent models—the motivation model, the distribution model and the per capita consumption model—to enable them to adequately develop institutions capable of implementing these models' objectives.

Once a policy is selected, the immediate institutional problem becomes the determination of the indicators needed to measure the policy's effectiveness. The search for criteria raise such issues as: (1) is the two child family an adequate policy indicator to measure the effectiveness of a stabilization policy? (2) do the given indicators ignore the other dimensions of the problem?; and (3) how are institutions best designed to evaluate policy?

This article asks more questions about policy making than it answers. It is hoped, however, that the questions will be helpful in determining how, and at what points, the legal process can be used in formulating and implementing population policies.

I. POPULATION POLICY FORMULATION

Population policy is the direct and indirect result of legislative, judicial, executive and administrative actions affecting many demographic components. These components include: (1) the size of population; (2) the rate of increase or decrease of either birth, death, or growth rates; (3) the distribution of a populace within an area including both internal and international migration; (4) the age and racial composition of a population; and (5) the qualitative composition of a population in terms of, *inter alia*, education, per capita consumption, and per capita income.

Population policies fall along a wide spectrum: on one end, the anti-natalists assert the advantages of lower growth rates; at the other end the pro-natalists assert the benefits of an increased population. Between these extremes are variations with anticipated and unanticipated consequences.¹

There are four behavioral elements of population change: political, economic, social and environmental. The effects of population

change can be diagramed by comparing these behavioral elements on a vertical axis and their determinants (size, rate, distribution, and composition) on a horizontal axis.²

A. *State Population Commissions*

In formulating population policy states are faced with the choice of whether to allow existing trends to shape the future size, rates of growth, composition, distribution and per capita consumption of its population or whether to alter these trends by adopting population policies. Either alternative, in effect, constitutes population policy.³ Twelve states through special state commissions have issued reports recommending explicit policies either to stabilize growth rates or to locate the populace in better balance relative to resources and services. These policy recommendations agree with the following conclusion of the Report of the Commission on Population Growth and the American Future which states:

The Commission believes that the gradual stabilization of population—bringing births into balance with deaths—would contribute significantly to the nation's ability to solve its problems, although such problems would not be solved by population stabilization alone. It would, however, enable our society to shift its focus increasingly from quantity to quality.⁴

These commissions have been either special population commissions,⁵ subcommittees of State Environmental Commissions,⁶ or Commissions on Land Use and Population Distribution.⁷ Although the commissions have been appointed by the Governors and/or the state legislatures, the reports have been primarily the result of research by citizens and state officials interested in population matters. The commission members represent a broad spectrum of racial, economic, religious and academic backgrounds. The reports are based in large part upon citizen testimony, academic studies performed at state universities, and statements of state and local officials. As a result these reports are useful in educating the general public about state population policies.

B. *Demographic Trends*

Recognizing that demographic trends form the basis of policy, the California, Colorado, Hawaii, Massachusetts and Michigan reports investigate the recent history and the projected future of population growth and change.⁸ Each report distinguishes between (1) growth due to natural increase; (2) growth due to migration; and (3) differ-

ential growth rates between the urban and rural areas. Policies are recommended based on these three important distinctions.

For example, Colorado's population grew by 26% from 1,753,947 to 2,207,259 in the sixties. However, 49% of this increase was due to net migration.⁹ California expanded by 28% in the sixties, with a present population of about 20 million. 51% of that increase is attributable to net migration, but this factor has begun to diminish—relatively and absolutely—in relation to natural growth.¹⁰ California and Colorado were used as examples not only because they were among the fastest growing states in population, but because their population problems should be solved by two distinct policies, one aimed at net migration and the other aimed at the birth rate.

Differential growth rates between urban and rural areas within state present another challenge to policy makers. The California, Colorado and Texas reports made specific recommendations to equalize disproportionate growth rates. 79% of Colorado's population live in urban areas.¹¹ 80% of California's population live in the Los Angeles and San Francisco megalopolises.¹²

The demographic movement nationally is from north and east to south and west. Besides California and Colorado, the large growth rates during the sixties occurred in Alaska (33.6%), Nevada (71.3%), Arizona (36.1%), Maryland (26.5%) and Florida (37.1%).¹³

States not only examined the historical nature of population change but also cited future projections. Some projections were made by extrapolating the average annual growth rate of the past ten years. For example, given Colorado's 2.3% average annual growth rate over the last decade, its population will double in 30.1 years giving Colorado a population of 4.4 million in 2000.¹⁴ The California Report indicates that if the rate of growth of the past decade continues, California's population could double giving California a population of 40 million by 1990.¹⁵

However, making general projections based on average annual growth rates was not precise enough for Michigan state planning purposes. Therefore, the Michigan Governor's Report made three projections based on different assumptions.

Projection I assumes that both current age, specific mortality, and fertility rates continue . . . Projection II assumes current mortality rates but fertility rates reduced proportionately to achieve replacement reproduction beginning in 1970 . . . Projection III assumes that current mortality and fertility levels continue until 1990 when zero population growth suddenly occurs.¹⁶

There were considerable variations among the three projections.

The age structure is another important demographic variable that has to be considered in making projections. The Michigan Governor's Report, the California Legislative Report, the Colorado Report and the Hawaii Report indicate that because of the large proportion of young persons who will enter child bearing ages within the next ten years, the replacement level fertility (2.1 children per family in the U.S.) would need to be maintained for 70 years in order to achieve zero population growth. The number of female children born will increase from 42 million in 1970 to 60 million in 1990. Therefore even if a 2.1 children per family average is maintained, the population will continue to increase until at least 1990. Only when the proportional increase in women of childbearing age relative to the entire population ceases, does zero population growth (ZPG) become possible.

C. *Population Policy Models*

The state reports base their policy considerations on a mixture of four models: (1) the Family Planning Model; (2) the Motivation Model; (3) the Population Distribution Model; and (4) the Per Capita Consumption Model. These models are discussed below.

The Family Planning Model assumes that family planning information and services are available on a voluntary basis to all those who need and request them regardless of age. The presumption is that such services will reduce unwanted and illegitimate births, with a resultant slight decline in the overall birth rate. According to the Michigan Governor's Report: "Successful family planning programs could reduce the birth rate in Michigan approximately 5% by 1974."¹⁷ The objectives of the Family Planning Model are based on an estimate of the unmet need for contraceptive services and the cost of providing them. One such estimate is provided by a Colorado estimate that 47,445 of the 66,558 low income women in need of such services were unmet.¹⁸

A typical Family Planning Model would allocate the greatest percentage of its budget to preventive contraceptive measures, while allocating at least 10% of the budget to curative birth control measures such as morning after pills and abortion.

The Motivation Model begins with the premise that the Family Planning Model is not the most effective way of instituting a population policy designed to stabilize the population growth rate. Proponents of the Motivation Model argue:

Logically it does not make sense to use *family* planning to provide

national population control or planning. The planning in family planning is that of each separate couple. The only control they exercise is control over the size of *their* family. Obviously, couples do not plan the size of the nation's population, any more than they plan the growth of the national income or form of the highway network. There is no reason to expect that the millions of decisions about family size made by couples in their own interest will automatically control population for the benefit of society. On the contrary, there are good reasons to think they will not do so. At most, family planning can reduce reproduction to the extent that unwanted births exceed wanted births.¹⁹

An implicit Motivation Model assumption is that the social goal of lowering overall population growth does not coincide with average private behavior. Since private motivation to have smaller families is lacking, motivation must be induced through government action. The reports contend that motivation is primarily lacking in the middle and upper income classes. This contention is based on these groups' proportionately greater birth rate.

The reports assume that the birth rate in groups will change as a result of a change in the social or economic motives for having children. However, rather than investigating the extent of the correlation between a change in motives and a change in fertility patterns and trying to quantify the results, the reports suggest that the motivation policies be tried in order to determine their effectiveness. The recommended policies include implementation of population education programs, improvement of the status of woman, and equalization of income taxes between single and married persons.

The Population Distribution Model attributes an increasingly significant part of the population problem to the ever increasing concentration of people in metropolitan areas and the accompanying depopulation of rural areas. None of the states considers this nonuniform distribution of population the sole problem, but each indicates that it could be an increasingly significant problem during the seventies.

Suggested policies focus on different but interrelated areas: (1) improving land use, powers and functions; (2) revitalizing rural areas; (3) directing urban growth; and (4) altering migration patterns. One example of this focus is evidenced in the Colorado Report which, after recognizing that metropolitan Denver had possibly surpassed her optimum size and might surpass her ecological carrying capacity within some twenty or thirty years, stated that:

It is imperative, therefore, both from the viewpoint of the well being of metropolitan Denver and also of the economic stagnation of rural Colo-

rado, that the necessary steps be taken now to develop the necessary consensus and understanding to plan for an eventual limitation in the size of metropolitan Denver.²⁰

The California State Office of Planning and the Department of Water Study provides another example. It developed three different models of future population distribution throughout the State's regions and analyzed the possible impact of each model for water management. It concluded that:

The results . . . vindicate the viewpoint that substantial benefits might accrue from a population and urbanization policy which would seek variations in the magnitude and spatial distribution of regional growth from that otherwise anticipated by an extrapolation of existing trends.

Despite the fledgling nature of population distribution policy formation, and the arguable question of how amenable such policies are to government action, the California, Hawaii, Colorado, Texas, Wisconsin and New York reports strongly support the implementation of such distribution policies in order that the ecological carrying capacity of certain metropolitan areas not be surpassed. Some reports state that such distribution policies are demographically limited because non-metropolitan areas will be able to absorb only a small percentage of the projected future natural growth of metropolitan areas.

The Per Capita Consumption Model attributes the problem of population not to numbers but to the individual demands of a populace on resources and services. While none of the state reports attributes depletion and pollution of natural resources to population growth *per se*, such conditions are recognized to result from many factors, among them per capita consumption rate and natural resources mismanagement.

Because the increasingly exorbitant consumption habits of individuals have been considered as a major source of the population resource dilemma, policies aimed at decreasing the demand for resources instead of policies to increase the supply of resources have been developed. The principle behind such policies are outlined in the Massachusetts Wetmore report:

The Committee feels strongly that the value system of the citizens of Massachusetts ought to be examined. America's emphasis on consumerism encourages waste and generates pollution. The American people often seem to measure their worth in material rather than humanistic terms. An adequate state population policy must eventually lead the people of Massachusetts to reexamine their values.²²

Increased uses of energy are one example of increasing depletion of resources which result more from per capita consumption increase than population growth. Hawaii reports that:

about 90% of the growth in power generation in the last 30 years has been caused by increased per capita income, while only 10% can be attributed to population growth.²³

Similarly, California reports that although population in California is growing at slightly over 1% per year, per capita consumption of electric power is increasing at 8.5% per year.²⁴

The impact of population growth becomes more complicated when specific ages are taken into account. Certain age groups have higher utilization rates of certain goods than other age groups.²⁵

The "multiplier effect," due to the interaction of increases in population and per capita consumption, magnifies the impact of population on resources, as the Michigan report explains:

In general, overall increases in resources consumption, or utilization can be attributed to changes in population, changes in per capita consumption (including changes in taste, substitution, etc.) and changes in the two variables acting together. When populations increase 50% consumption increases 50%. The total increase is not 100% derived by adding the two factors together, but is instead actually an increase of 125%. The extra 25% is created by the interaction of the two changes occurring together . . . the multiplier effect of population.²⁶

II. THE LEGAL COMPONENT OF POPULATION POLICY: VOLUNTARISM VS. COERCION

A. *Human Rights: Voluntarism vs. Coercion*

Population policy can be implemented by various legal means ranging from voluntarism to coercion. A voluntarist would maintain that:

. . . the right to decide whether and when to have a child is a basic civil liberty and by the free exercise of that right we determine the continuity and quality of the world of the future . . . if we really make freedom of choice possible with respect to human reproduction there will be no need to resort to compulsion in this area.²⁷

Mr. Justice Goldberg gave a compelling argument for voluntarism in his concurring opinion in *Griswold v. Connecticut*:

Surely the Government absent a showing of a compelling subordinating state interest, could not decree that all husbands and wives must be sterilized after two children have been born to them. . . . Yet, if upon

a showing of a slender basis of rationality, a law outlawing voluntary birth control by married persons is valid, then, by the same reasoning, a law requiring compulsory birth control also would seem to be valid. In my view, however, both types of law would unjustifiably intrude upon rights of marital privacy which are constitutionally protected.²⁸

Advocates of coercion maintain that the elimination of unwanted births is not enough to solve the problem, since the average couple desires more than 2.1 children, the number needed for zero population growth. They propose indirect conditioning of choice through manipulation or inducement and suggest legislative provisions such as monetary compensation to reward and/or penalties to punish specific kinds of reproductive behavior.

The choice of either the voluntarist or coercive measures depends upon a country's perception of the nature of the problem.

At issue first is whether a policy which aimed to ensure complete freedom of choice for an individual couple deciding whether to have a child would result in an average fertility equalling the replacement goal. Second, there is the question whether and to what degree, we should be willing to sacrifice some individual freedom of choice by instituting manipulative or overtly coercive regulation of reproductive behavior.²⁹

Population growth is one of the factors that can erode personal freedom and if continued could eliminate individual freedom of choice.³⁰ As population grows, there will be an increasing need for government intervention to protect individual freedom of choice and to affect individual behavior patterns. At issue here is how to formulate the most humane laws to implement a specified policy.

B. *Legal Change*

Before analyzing legal change, one has to consider whether or not legal change should be voluntary or coercive. There are three kinds of legal change, ranging from voluntarism to coercion, from which population policy makers can choose: (1) removal of pro-natalist policies; (2) creation of incentives and; (3) development of disincentives or implementation of anti-natalist policies.

1. *Removal of Pro-natalist Policies*

Pro-natalist policies originally based on moral grounds have been modified on the basis of the protection of fundamental rights, in particular the right of privacy. The first means of removing pro-natalist policies is typified by the repeal of laws prohibiting the distribution of information on birth control services and methods

and the advertising and display of prescription and non-prescription contraceptive devices.³¹

The next legal step would be to allow abortions “. . . to preserve a woman's mental or physical health and/or to avert the birth of defective offspring in cases of rape or incest.”³²

The final legal means of insuring the right of privacy was taken by the Supreme Court in the companion case of *Roe v. Wade* and *Doe v. Bolton*.³³ The court held that a Texas statute³⁴ and a Georgia statute³⁵ which allowed abortions *only* where continued pregnancy would endanger a pregnant woman's life or endanger her health, was an unconstitutional infringement of privacy and personal liberty. The Court held that in the first trimester abortion would be a matter for the woman and her physician to decide; in the second trimester, the state may, if it chooses, regulate the procedures in ways that are reasonably related to maternal health; and only in the third trimester, subsequent to viability, may the states “regulate and even prescribe abortion except where necessary in appropriate medical judgment for the preservation of the life or health of the mother.”³⁶

Along with the repeal of the pro-natalist aspects of laws directly affecting fertility it is also necessary to consider the pro-natalist aspects of laws which indirectly affect births through social and economic processes.³⁷ In order to insure natal neutrality a change in tax laws would include the equalization of income taxes between single and married persons and the removal of tax deductions for children.

2. *Creation of Incentives*

The incentive stage would involve such legal changes as tax rebates for families of two or less children. Such incentives would be positive and would not jeopardize the human rights of an individual if he is a third or fourth child. Another example of an incentive measure is payments to those who voluntarily consent to sterilizations.

3. *Development of Disincentives or the Implementation of Anti-Natalist Policies*

The implementation of anti-natalist policies should include the development of measures requiring compulsory sterilization of persons with three or more children. There have been several unsuccessful legislative attempts to institute anti-natalist, or population control, policies for those on welfare,³⁸ and it would be a misrepre-

sentation of state activity to avoid mentioning the attempts to institute such controversial measures. Among the examples of coercive legislative attempts were Tennessee and Ohio bills which would have made welfare payments conditional on the number of illegitimate children. If a woman had more than one illegitimate child, she would have been required by the Tennessee bill to be sterilized in order to be eligible for welfare payments.³⁹ The Ohio bill would have required that a woman have injections of depo provera, the new shot contraceptive to qualify for aid.⁴⁰

Despite official federal and state reports that the largest proportion of the population increase is attributable to the white middle class, some state legislators continue to introduce coercive legislation aimed against racial minorities under the auspices of population policy. These attempts to alter the racial composition of the population violate the equal protection clause of the Constitution and restrict the fundamental individual rights of one group.

C. *Transformation of Policy Into Law*

The transformation of population policy into law through judicial or legislative action depends on two distinctive functions of the legal process.⁴¹ First, the legal process outlines the limitations on the policy maker and defines the boundaries of permissible decision making. Second, the legal process shapes policy objectives as it transforms policy into principles of law.

Once the policy objective (i.e., the stabilization of the population growth rate) "is incorporated as such into law, it takes on a life of its own and might well be expanded to cover a variety of circumstances"⁴² never contemplated by the policy formulator. Option number one (in figure 1) is the only viable alternative which can be

FIGURE 1

	Voluntary	Coercive
Policy:	A/Removal of Pronatalist Policies	B/Incentives for fewer children
		C/Disincentives for more children
Legal Change:	1/Remove laws prohibiting contraceptives to unmarrieds	2/Change tax laws: i.e. tax rebates
		3/Enact compulsory sterilization law after 3rd child

transformed into a binding legal decision under a *Griswold* rationale whereas option number three can only be based on a policy objective of a decreasing population growth, not on a legal decision. Therefore great care must be taken, both judicially and legislatively, in adopting the requisite legal standards.

III. LEGAL SYSTEMS FOR THE FORMULATION OF POPULATION POLICIES⁴³

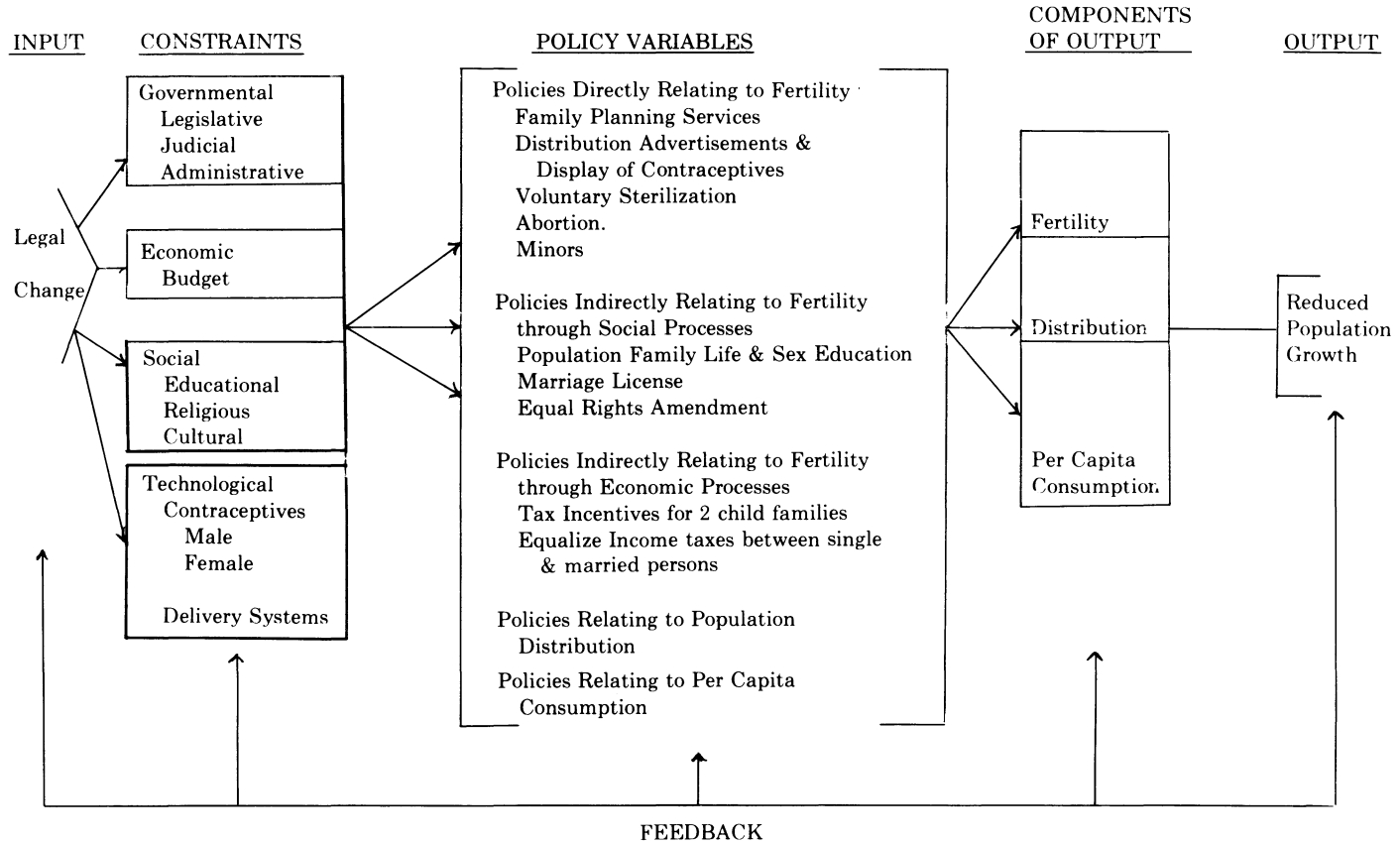
One central issue in determining a population policy relates to the most effective use of scarce resources available to influence population growth. A systems approach to the examination of a comprehensive set of public policies to reduce rapid population growth can be a useful tool in assisting decision makers in gaining insight into the feasible alternatives available to them to directly and indirectly influence population growth (see figure 2 below). The system could be conceptualized as those sets of public and private decisions which influence population growth and the interrelationship between the two sets. Assuming that the objective or output of the system is to reduce population growth to a level where a desirable balance between population and available resources is maintained, a logical approach would be to determine what kinds of decisions should be taken at the public and private levels to achieve said objective.

The decision makers include: (1) the couple who decide or do not decide to have another child; and (2) individuals in the judicial, legislative, and executive branches of municipal, state, regional and national government, who formulate, implement and administer policies.

The legal systems model is helpful in conceptualizing the problem, in order that all kinds of law, not just family planning and abortion laws, will be considered in formulating prescriptive population policies. In creating a population policy it is important to analyze pro-natalist laws which have but an indirect effect on a population policy. A change in these laws would also advance the objective of a decreased birth rate.

The legal systems model is particularly applicable to policy formation within the legislative process. The state legislatures have been an important forum in which prescriptive population policies have been debated, formulated and, often times, implemented. This interplay between prospective policy formulation and law is distinctively a legislative process. Legislators can outline existing laws, determine political and legal constraints on the policy and, based on available options, outline the necessary legal change.

LEGAL SYSTEMS MODEL



The legislative process, while not always successful, has some distinct advantages over the judicial process in formulating general policy. The judicial approach is inductive, courts being constrained to decide the specific case before it. On the other hand, the legislative approach is deductive, and therefore the legislature is better able than the judiciary to consider overall policy based on all the facts and public opinion. The judiciary, however, does have the advantages of greater objectivity (through less public pressure) and expediency where necessary.

The legal systems model is useful in assessing the demographic effects that a change in one law might have on another law, an individual, a community, or a state. Consideration should be given to: (1) the impact potential policy decisions would have on the direction and magnitude of population growth rates (both on the overall and on specific groups); (2) the political feasibility of adopting such measures; (3) the government action required to implement such policies; and, finally, (4) the intended and unintended effects on other policies.⁴⁴

Although the legal systems model is crude, it provides a useful tool in creating a conceptual framework for analyzing the demographic effects of legal change on the population. It is not meant to be an implementing mechanism for the solution of the problem.

A. *Legal Systems Model*

A key element of any system is an identification of system output. Although different policy objectives determine different outputs, typical outputs include reduced birth rate and the reduced impact of population growth on state resources, services and environment. Some state legislatures have identified outputs by passing Population Stabilization Resolutions.⁴⁵ These resolutions are significant in that they establish a foundation on which further laws can be considered. They define the population problem, not in terms of numbers, but as a set of extremely complex social interactions between age structures, distribution and consumption patterns.

The elements of the legal systems model are discussed immediately below.

1. *Inputs*

The inputs consist of the different legal changes necessary for achieving the desired output. Foremost in choosing appropriate inputs is a knowledge and understanding of population dynamics, that is, the interrelationship among the determinants of population

growth such as social attitudes and private behavior and the impact of population growth on resources and services. Such a sophisticated knowledge of population dynamics is necessary at all levels of decision making if the system is to function efficiently. Legislative inputs will refer to two types: (1) inputs necessary to either directly or indirectly affect policy variables; and (2) inputs necessary to establish administrative structures to assure the functioning of the system or the implementation of policies. (The latter will be dealt with in the last section of this article).

2. *Outputs*

Outputs consist of the influences on population change of three interrelated determinants—fertility, distribution/migration, and per capita consumption.

3. *Policy Variables*

Policy variables could be altered by a given legal change. They can also be considered as intermediate outputs in themselves. (These variables and laws affecting them will be discussed in detail *infra.*)

4. *Constraints*

Many constraints are present which could interfere with the efficient attainments of the desired output. One such constraint is the legal system itself where it is not well organized, well manned, well funded nor smoothly functioning. The laws themselves may be constraining forces in prohibiting certain actions. Another constraint might be society's perception of both the legal system and the laws enacted within that system. This is particularly true where individuals are uninformed about given laws and/or do not sanction them.

The political culture could act either as a constraint or as a facilitator. For example, the American political culture is based on the ideological tenets of Lockean democracy which advocate the natural right of the individual to work out his own destiny with minimal governmental intervention.⁴⁶ Such a political culture may inhibit the implementation of population solutions because they entail a degree of governmental control over individual autonomy. On the other hand, the classic liberalism of John Locke on the natural right of the individual may help facilitate population policy as evidenced in the Supreme Court's use of such doctrine in *Roe v. Wade*.⁴⁷

B. *Feedback*

The input, output and feedback within a legal system is a continual interplay of a society influencing law and law influencing society, its attitudes, behavior, administrative apparatus, and desires for legal modifications. Demographic surveys and information on population change are essential in evaluating the different kinds of demographic feedback in a legal systems model.⁴⁸ Among the demographic techniques used to evaluate a new law's effectiveness are: (1) an analysis of the age specific fertility rates; (2) the decomposition techniques; and (3) parity level examination. While such techniques can be used with laws indirectly affecting fertility, they are more applicable for an analysis of laws directly affecting fertility. These techniques are discussed below.

1. *Age Specific Fertility Rates*

Age specific fertility rates (ASFR) are the number of births in a given year to women in a given age interval. The intervals are usually five years in duration. To determine a significant change in an ASFR interval with any degree of statistical reliability requires examination over a long term of at least fifteen to twenty years. Old laws should not be evaluated, nor new ones proposed, on the basis of short term fluctuations in the ASFR. One possible comparison would be between the ASFR with the legal change and an estimated ASFR assuming no change in the law. The estimate is obtained by considering the ASFRs before the change and extrapolating, taking great care to isolate the effect of the particular law in interest.⁴⁹

2. *Decomposition*

This technique decomposes the change in the crude birth rate (CBR) (total births over total population at a given time) into three components: births due to changes in (1) age structure; (2) percent married; and (3) marital fertility. A sample chart is shown below.

State, Year Program Began, and Follow Up Year		CBR	Change in CBR	1% of change in CBR due to change in:			
				All factors	Age Structure	% Married	Marital Fertility
State	1960	A			1960 -	1970	
	1965	B	- or +	100%	X%	Y%	Z%
	1970	C	- or +				

This chart provides a clear indication as to which demographic factors one can attribute a change in the CBR. For example, if the greatest percentage of change in the CBR was attributable to the age structure, then the changes in law had little effect; but if it were attributable to the marital fertility then a change in law which legalized and made available free family planning services might have had some effect. The degree to which a change in marital fertility is attributable to such policy changes might not be easily quantified because of other social variables that would effect such a change, such as raising the status of women through better education. More detailed analysis can be performed by decomposing the change in age specific fertility rates instead of the crude birth rate and then comparing these with the data on the acceptance for family planning programs over the time period.

3. *Parity Level*

Because so many state reports emphasize the two child family, one useful demographic technique in evaluating the effect of a two child family policy is an analysis of the parity level. The parity level is the order of a particular birth, in other words, whether the child born is the first, second or third child within a family. Analysis of such data over time will indicate whether or not two child family policies have been effective. The parity order is also dependent upon the average age of the marriage and the average of the first birth. It is therefore important to analyze these factors in order to determine whether women are actually having fewer children or the same number at older ages.

C. *Policy Variables*

To insure the desired system output, policy variables need to be examined for their potential in decreasing population growth. The five broad categories of policy variables are: (1) policies directly relating to fertility; (2) policies indirectly relating to fertility through social processes; (3) policies indirectly relating to fertility through taxes;⁵¹ (4) policies directly and indirectly relating to population distribution; and finally, (5) those policies directly and indirectly relating to per capita consumption. The following discussion will encompass only those legislative proposals which deal with the above five categories of the policies. Judicial decisions will not be considered.

The system model is designed to aid in determining which policies

to choose. Since the effectiveness of legal change on population growth is uncertain or unknown, subjecting such inputs to a 'test' to determine a hypothetical output might help to choose and formulate more effective legislation. Thus, it might be useful to trace the effects and determine the outcome of the legislative categories considered below.

An example of this type of testing would be a theoretical comparison between the effects of legislation requiring (1) a population education curriculum and (2) instituting programs to raise the status of women. Which legal change would be more functional in implementing a policy of the reduction of population growth would depend on many conditions within a state, some of which could be determined by projecting probable system feedback. Budgetary considerations should be similarly analyzed.

1. Legislation Directly Affecting Fertility

Laws directly affecting fertility⁵² are those that regulate family planning services, contraception, voluntary sterilization and abortion. They can also regulate distribution of information, advertising of contraceptive devices, eligibility and referral for family planning services and access to these services according to age and marital status.⁵³ Programs can be funded by state or federal appropriations or through health insurance coverage.

a. Family Planning Services

As of 1970 Colorado⁵⁴ and Tennessee⁵⁵ have enacted comprehensive family planning programs. The pertinent provisions provide that family planning is to be readily available to all persons regardless of sex, race, age, income, number of children, marital status, citizenship, or motive. Voluntary sterilization of a requesting and consenting patient over 18 years old is held to be consistent with public policy. Physicians may refuse to recommend any contraceptives for any medical reason and physicians, hospitals and program employees may refuse to participate for reasons for conscience or religion, provided appropriate referrals are made. The dissemination of contraceptive information in Colorado and Tennessee health and welfare agencies, schools, medical institutions, and other instrumentalities is allowed and encouraged by public policy.

Family planning must also be made available to the indigent free of charge and to others at a small fee that covers costs. The statutes also give authority to state health departments to receive funds from state and federal agencies which is provided on a matching basis ranging from 10 percent for Title X of the Public Health Service

Act, the major federal resource, to 20 percent for Title II of the Economic Opportunity Act, to 25 percent for Titles V and IV-A of the Social Securities Act.⁵⁶ In addition, the Tennessee law provides that health insurance covers voluntary sterilization, regardless of "the insured's reasons for sterilization."⁵⁷

In general, however, contraception, voluntary sterilization, infertility and normal pediatric care are considered ambulatory care; and since health insurance covers little ambulatory care, such birth related and birth control services are not covered in most health insurance policies.⁵⁸ While there are currently several attempts to remedy this situation at the national level there have been no comprehensive attempts in the state legislatures to provide health insurance coverage for all ambulatory care. There have been unsuccessful state legislative attempts to provide health insurance coverage for specified care; Colorado bill on maternity care;⁵⁹ Michigan bill on voluntary sterilization;⁶⁰ California bill on abortion.⁶¹ None of these bills, however, cover all ambulatory care relating to birth control services in general.

b. Advertising, Distribution, Display and Sale of Contraceptive Devices

The majority of states do not prohibit the advertisement, distribution and sale of nonprescriptive contraceptive devices. However, in some states, the sale must be made in a registered pharmacy and the seller must be a pharmacist. Furthermore, the person to whom contraceptives can be sold is limited by age and marital status.

A Colorado statute,⁶² recently enacted, repealed state provisions prohibiting vending machine sale of prophylactics and restricting the sale of prophylactics to registered pharmacies, thus providing for retail sale through other stores and health clinics.

c. Voluntary Sterilization

Voluntary sterilization is legal in all states. Some states specifically require that the procedure be performed by a licensed physician or in a licensed hospital.

The state of Virginia has recently repealed their requirement that vasectomies upon persons 21 years and older be performed in a hospital,⁶³ thus allowing the procedure to be completed in a clinic or in a doctor's office.

d. Minors

There are a number of factors which influence the availability of medical care to minors without parental consent. Some of these are the age of majority, the general law governing medical treatment of minors, and specific statutes relating to family planning, contracep-

tion and venereal disease.⁶⁴ At least 14 states have recently reduced the age of majority from 21 to 18, thus allowing those 18 and older to obtain medical care without the consent of parents.

A recently enacted Georgia statute⁶⁵ provides for contraceptive services to be given to any female regardless of age and marital status and without parental consent. A 1972 Alabama Act⁶⁶ provides for such services to be given to minors fourteen years and older. However, there are some 25 states that do not allow for the provision of contraceptive care for minors without parental consent.

There has been a growing liberalizing trend in laws relating to family planning, general medical services to minors and contraception and venereal disease care to minors. In 47 states minors may now obtain examination and treatment for VD without parental consent.

2. Legislation Indirectly Affecting Fertility Through Regulation of Social Norms

a. Population, Family Life and Sex Education

State departments of education most often develop their own educational curricula. However, state legislators have often introduced resolutions recommending that certain courses be taught in the area of population, family life and sex education.⁶⁷

b. Marriage Licenses

The Kentucky,⁶⁸ New Hampshire,⁶⁹ and Virginia⁷⁰ legislatures have recently required that a list of family planning clinics in the state be furnished to applicants for marriage licenses.

c. The Equal Rights Amendment

The proposed Equal Rights Amendment (ERA) states that "Equality of rights under the law shall not be denied or abridged by the United States or by any state on account of sex." The purpose of the ERA is to clarify the legal status of women, remove existing discrimination against women, and eliminate discrimination against women in the future. Three-fourths of the state legislatures must ratify it within seven years of the date of congressional acceptance for it to become the 27th amendment to the United States Constitution.

3. Legislation Indirectly Affecting Fertility Through Taxes

Legislation has been introduced in the United States Congress⁷¹ and the California legislature⁷² to equalize taxes between single and married persons. The bills extend to unmarried persons the tax benefits of income splitting now enforced by married persons filing joint returns. These bills, while they have not passed, represent

important attempts to neutralize tax policy, so that couples are not given financial incentives to marry or not to marry.

4. *Legislation Directly Affecting Population Distribution*

Legislation specifically written to redistribute population is as yet not very developed.⁷³ Florida,⁷⁴ Maine⁷⁵ and Vermont⁷⁶ have enacted land use legislation. The Florida Act puts the state government in a position to exercise a limited degree of control over the growth and development of land within the state, while preserving the processes of local government agencies and rights of private landowners. The role of the state is focused on those land use decisions which will have a substantial impact outside the boundaries of the local government in which the land is located.⁷⁷

5. *Legislation Directly Affecting Per Capita Consumption*

An increasing number of state legislators consider the exorbitant consumption habits of individuals as one of the sources of the population/resource dilemma and have therefore developed policies to decrease demand instead of increase the supply of resource.

a. Tax Proposals

One proposal which has yet to be translated into legislation is a suggestion put forth in *ECOLOGIST* as follows:

A raw materials tax, scaled proportionately to the availability of certain raw materials, would favor labor intensive industries and discourage resource intensive industries. An amortization tax, scaled proportionately to the estimated life of a product would penalize short lived products and encourage the production of long lived products thus reducing resource utilization and the solid waste problem and pollution, particularly the solid waste problem. Plastics, for example, which are so remarkable for their durability would be used only in products where this quality is valued, and not for single trip purposes. This tax would also encourage craftsmanship and labor intensive industry.⁷⁸

b. Rate Structure for Electricity

Other proposals deal more specifically with demand for gas and electricity. A Massachusetts bill⁷⁹ has been introduced to modify the rate structure for electricity. It proposes to alter present structures which charge less as you use more by creating separate rate structures for normal times and peak periods, the rates to be greater during peak periods such as summer.⁸⁰

6. *Conclusion*

Hopefully by using a legal systems model the effects of legal changes on population policy can be approximately determined.

Fundamental to this integrated systems approach is a population policy which takes account of fertility, distribution, and per capita consumption. The model is crude, but it is hoped that it can be practically used in determining a population policy for a particular state based on its resources, nature of its particular population problem and the desired output.

IV. INSTITUTIONAL DESIGN⁸¹

The structure of decision making for population policy depends in many respects on how the policy alternatives are designed. This in turn determines which options are chosen and how they are implemented. There are several general decision making designs that characterize some aspects of the process.

A. *Decision Making Designs*

1. *Political Design*

The political design is characterized by the dynamics of the political participants and deals with the issue of how to make the decision makers politically accountable to the public in the absence of any defined goal. In the case of population policy, states have avoided defining an optimum population goal⁸² but rather have used the policy objective of "population stabilization." The more loosely defined population stabilization objective has allowed politicians to avoid value laden judgments. It has also allowed them to avoid infringing on their constituent's individual right of deciding if and when to have a child.

Politicians and governmental reports have only pointed out the desirability demographically of a two child family in reaching a stabilized growth rate. While there are a few other politically acceptable alternatives to influence the personal component of the policy, such a predicament does pose problems for institutional design if decision makers are to be held politically accountable for population policy.

2. *Common Law Design*

To date, the courts have been the most significant institutional mechanism for generating a population policy, whether the objective has been a decrease or increase in the population. This is due in large measure to the political and emotional nature of the subject. Courts, according to Ackerman and Sawyer, have, and can, be significant mechanisms for complementing policy generally:

In theory at least the common law judge seems to have a good deal to recommend him: the ideal judge would strive to be impartial, seek to explicate the complex values of our legal tradition in an effort to formulate a sensitive response to the novel aspects of the . . . problem . . . respond to reasoned arguments advanced both by the lawyers in the case before him and by academic critics writing in the law reviews. It is true, of course, that the common law process will proceed slowly on a case by case basis, but in the absence of a satisfactory alternative, the Common Law Model at least seems to assure that these incremental decisions will be made in a conscientious, disinterested, and sensitive fashion.⁸³

However, experience has shown that the courts are (1) an extremely expensive means of developing policy; (2) incapable of sustaining scientific inquiry beyond the time required for a decision and (3) restricted by the facts in the case before them.⁸⁴

3. *The Administrative Design*

If a policy can be established statutorily it should be a relatively straight-forward matter to design an institution to implement that policy. The problem is, however, to establish the statutory policy. To date, there are at least four different ways states have defined the population problem.

Most states have developed adequate statutory family planning policies and established the agencies necessary to implement their objectives. However, states are just beginning to develop adequate definitions of policy alternatives based on the three other policy models—Motivation, Distribution and Per Capita consumption.

Once such policy alternatives are clearly defined, it will be necessary to establish standards "sufficiently clear and coherent to serve as an appropriate statutory basis for agency action."⁸⁵ Examples of such proposed standards or outputs are the stabilization of Hawaiian population growth,⁸⁶ an optimum limit on the Denver metropolitan area,⁸⁷ developing alternative patterns of distribution and settlement in rural areas of Texas,⁸⁸ and limiting per capita consumption of electricity by changing the rate structure of electricity in California.⁸⁹

Massachusetts,⁹⁰ New Hampshire⁹¹ and Hawaii⁹² have recently enacted legislation to either establish a population study commission to formulate statutory policy or to organize a permanent commission with state appropriations to implement policy.

B. *Policy Indicators and Evaluation*

The next institutional problem is to decide what policy indicators

institutions should use in order to measure the effectiveness of policy.⁹³ This raises such questions as: (1) is the two child family an adequate policy indicator to measure the effectiveness of a stabilization policy; (2) what policy indicators should states use to measure the effectiveness of an optimum population for a metropolitan area?; and (3) to what extent do these indicators ignore other dimensions of the problem?

Since facts are essential to this evaluation process, inquiry must be made into how these institutions are to be best designed to facilitate fact finding, determine reliability and adequacy of data, and expose possible bias in the data. Care must be taken to ensure that the assembled facts are used not only to prove the effectiveness of a given program but to determine the effectiveness of alternative policies as well. States must design institutional controls to induce administrators to reveal the errors in their predictions. Administrators to induce administrators to reveal the errors in their predictions. Administrators and/or agencies should not be (1) "so committed to the efficacy of reform that they cannot afford honest evaluation";⁹⁴ or (2) so aware of the political utility in advocating specific reforms knowing that certain outcomes would be more politically acceptable than others that they become biased;⁹⁵ or (3) so committed to reform so as justify "the reform on the basis of the importance of the problem, not the certainty of their answer."⁹⁶

Several state reports⁹⁷ discuss ways in which data collection functions, research and planning functions, and program implementation functions of population policy could be improved by either centralizing them in the Governor's office or integrating them into the specific functions of each relevant agency of state government.

In regards to fact finding functions, Michigan recommends that various functional agencies should make their analysis on the basis of alternative trends in population growth, maintaining that the various costs and benefits of alternative fertility levels should be known and considered by different departments.⁹⁸

In deciding on a choice between integrating the population component into all planning functions of each of the executive departments or creating a separate office of population, CALIFORNIA'S TWENTY MILLION recommended the model of California's Office of Planning and Research in the Governor's Office. The rationale for placing the state's planning operation in the Governor's office was that the functional planning within each of the existing departments (whether it be health, transportation, housing, etc.) become tools for implementing a set of deliberately determined objectives

for state wide developments, rather than a means of assessing, in an unbiased manner, the passive determinants of development.⁹⁹

CONCLUSION

This article has attempted to explain to the lawmaker the demographic dimensions of population policy. It has not attempted, as most articles do, to criticize the rationality of legal opinions but rather to show how and at what points the legal process can be used in formulating and implementing population policies. It has discussed how the demographic dimensions of policies are and can be used beneficially or detrimentally in evaluating the effectiveness of policy and pointed out the potential for error in using only certain policy indicators without regard to other indicators.

For the demographer and for the quantitative technician it has attempted to outline the legal dimensions that need to be considered in transforming policy into law.

A thorough understanding of both the demographic and legal components is essential if the formulation and implementation of policies are to be successful.



FOOTNOTES

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¹Sills, D., *Unanticipated Consequences of Population Policies*, CONCERNED DEMOGRAPHY, 2:4:63, (March, 1971).

²Such an outline is a variation of one created by Berelson, B., *Population Policy: Personal Notes*, 25 POPULATION STUDIES 175-16 (1971). The reader should also be aware of the fact that there are internal relationships among demographic variables, for example the effect of declining mortality on fertility. The policy implication of such an internal relationship is that programs affecting mortality can indirectly affect fertility.

³Davis, K. and F. Styles, CALIFORNIA'S TWENTY MILLION: RESEARCH CONTRIBUTORS TO POPULATION POLICY, at 6, (Population Monograph Series No. 10, Univ. of Cal., Berkeley, 1971). (Hereinafter cited as CALIFORNIA'S TWENTY MILLION).

⁴REPORT OF THE COMMISSION ON POPULATION GROWTH AND THE AMERICAN FUTURE, (Mar. 1972), available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

⁵CALIFORNIA POPULATION PROBLEMS AND STATE POLICY, (California State Assembly Science and Technology Advisory Council, Dec. 1971). (Hereinafter cited as CALIFORNIA REPORT); REPORT OF THE TEMPORARY COMMISSION ON POPULATION STABILIZATION (Hawaii State Legislatures, 1971), (Hereinafter cited as HAWAII REPORT); FINAL REPORT OF THE HOUSE SPECIAL COMMITTEE INVESTIGATING THE TREND AND IMPACT OF POPULATION GROWTH IN THE COMMONWEALTH OF MASSACHUSETTS, (Massachusetts State Legislature, Dec. 1971) (hereinafter cited as MASSACHUSETTS REPORT). HEARINGS OF THE MICHIGAN STATE SENATE SPECIAL COMMITTEE ON IMPACTS AND TRENDS OF POPULATION GROWTH IN THE STATE OF MICHIGAN, (Michigan State Legislature, Oct. 15, 1970); REPORT OF THE PENNSYLVANIA ABORTION LAW COMMISSION, (Pennsylvania Exec. Dept. June, 1972); POPULATION DISTRIBUTION IN TEXAS (Texas State Legislators Senate Interim Committee on Population Distribution, Dec. 1972), (hereinafter cited as TEXAS REPORT).

⁶COLORADO OPTIONS FOR THE FUTURE, (Colorado Environmental Commission, 1972), (hereinafter cited as COLORADO REPORT); AN ENVIRONMENTAL POLICY FOR CONNECTICUT, (Governor's Committee on Environmental Policy June, 1970); Oakley D. and L. Corsa, POPULATION POLICY FOR THE STATE OF MICHIGAN, (Prepared for the Michigan Governor's Council Population Committee, March, 1973), (hereinafter cited as MICHIGAN REPORT).

⁷CO-ORDINATING GOVERNMENTS THROUGH REGIONALISM AND REFORM, Vol. 1, LAND USE CONTROL: MODERN TECHNIQUES FOR MODERN PROBLEMS, and Vol. 2, FISCAL CRISIS AND MUNICIPAL MANPOWER OPPORTUNITIES: LETTING NECESSITY MOTHER INVENTION, (New York State Legislature Committee on Metropolitan Regional Areas Legislative Document No. 18, 1969-71); FINAL REPORT OF THE WISCONSIN LAND RESOURCES COMMITTEE, (Wisconsin State Legislature, Feb. 1973).

⁸CALIFORNIA'S TWENTY MILLION, *supra* n. 3, at 6.

⁹COLORADO REPORT, *supra* n. 6, at 7.

¹⁰CALIFORNIA'S TWENTY MILLION, *supra* n. 3, at 262.

¹¹COLORADO REPORT, *supra* n.6, at 7.

¹²CALIFORNIA'S TWENTY MILLION, *supra* n. 3, at 272.

¹³Hauser, P., *The Census of 1970*, SCIENTIFIC AMERICAN, 225:1:17-25 (July, 1971).

¹⁴COLORADO REPORT, *supra* n. 6, at 7.

¹⁵CALIFORNIA REPORT, *supra*, n. 5, at 6.

¹⁶MICHIGAN REPORT, *supra* n. 6, at 33.

¹⁷*Id.* at 19.

¹⁸COLORADO REPORT, *supra* n. 6, at 55.

¹⁹Davis, K., *Population Policy: Will Current Programs Succeed?* SCIENCE, 158:3802-3812 (Nov. 1967).

²⁰COLORADO REPORT, *supra* n. 6, at 53.

²¹CALIFORNIA'S TWENTY MILLION, *supra* n. 3, at 298.

²²MASSACHUSETTS REPORT, *supra* n. 5, at 12.

²³HAWAII REPORT, *supra* n. 5, at 40.

²⁴CALIFORNIA REPORT, *supra* n. 5, at 18.

²⁵MICHIGAN REPORT, *supra* n. 6, at 42. The report elaborated by the following examples:

"When there is a marginal increase in age groups having high utilization rates then consumption rates are magnified. Thus for constant ratios of car registrations, when the population aged 20-75 increases more rapidly than the total population no matter what the fertility projection, the impact on miles of highway needed is greater than the increase in total population size. Using the three population projections, by 2040 total population will grow by 91%, 33%, 25%, as compared with 1970 miles of highway needed to maintain current load factors will increase even with no change in registrations per person 20-75, by 112%, 57% or 50%. If age specific utilization rates are increased, the magnifying effect of growth by group will be even greater."

²⁶MICHIGAN REPORT, *supra* n. 6, at 42.

²⁷Pilpel, H., *Limiting Population: The Voluntary Approach*, CIVIL LIBERTIES, No. 281 (Nov. 1971). See also Lee, L., LAW, HUMAN RIGHTS AND POPULATION: A STRATEGY FOR ACTION, (Law and Population Monograph Series, No. 6 (Fletcher School of Law and Diplomacy, Tufts University).

²⁸Griswold v. Connecticut, 381 U.S. 479, at 496-97 (1965).

²⁹Marks, J., *Legal Analysis and Population Control: The Problem of Coercion*, 84 HARV. L. REV., at 1869-70 (1971).

³⁰Miller, A., *Some Observations on the Political Economy of Population Growth*, LAW AND CONTEMPORARY PROBLEMS, at 614, (Duke School of Law, 1960).

³¹Pilpel, H., BRIEF SURVEY OF U.S. POPULATION LAW, (Law and Population Monograph series, No. 2, The Fletcher School of Law and Diplomacy, Tufts University).

³²Model Penal Code §230.3 (American Law Institute, Proposed Official Draft, Phila. Pa. 1962).

³³Roe v. Wade, 410 U.S. 133 (1973); Doe v. Bolton, 410 U.S. 179 (1973).

³⁴VERNON'S TEXAS STAT. §§1191-1194, 1196 (1948).

³⁵GEORGIA CODE §§26-1201-03.

³⁶Doe v. Bolton, 410 U.S. 179 (1973). For a more thorough analysis of Roe and Doe, see Gittelman, J., and D. Licht, WHAT THE SUPREME

COURT SAID: AN EXAMINATION OF THE EFFECT OF ROE V. WADE AND DOE V. BOLTON ON EXISTING ABORTION LAW (Unpublished report, Harvard Law School, May, 1973).

³⁷See Blake J., *Population Policy for Americans: Is the Government Being Misled?* SCIENCE 164:3879:522-529 (May, 1969).

³⁸For a more thorough analysis of coercive measures see Paul, J., *The Return of Punitive Sterilization Proposals*, LAW AND SOCIETY REVIEW 3:1:9 (Aug. 1968) and Ferster, E., *Eliminating the Unfit — Is Sterilization the Answer?* 27 OHIO ST. L. J. 591 (1966).

³⁹Tennessee H.B. No. 20 (1971) introduced by Representative Larry Bates. A segment of the Bill reads:

"Before such female person, girl or woman, shall be eligible to receive such monthly welfare assistance, or benefits when it appears that she is presently the mother of more than one (1) illegitimate child, that such female person, girl or woman, shall first submit herself and agree that a sterilization operation may and shall be performed on her by competent medical personnel."

⁴⁰H.B.No. 512 (1971-1972) (109th General Assembly, Reg.Sess.) by Representative Robert E. Netzley. A segment of the Bill reads: "Unless free injections of depo provera on an every third month treatment basis are otherwise available to any person in a city or general health district who requests this treatment in order to qualify for aid under chapter 5107 of the revised code"

⁴¹Katz, M., *Legal Dimensions of Population Policy*, 50 SOCIAL SCI. Q. 732 (1969).

⁴²*Id.* at 733.

⁴³The fourth part of this paper is based upon an unpublished paper, Marson, W., THE USE OF THE FAMILY PLANNING MODEL FOR THE REDUCTION OF POPULATION GROWTH IN DEVELOPING COUNTRIES (Kennedy School of Gov't, Harvard University, 1970). See also McLaughlin, C. and E. Trainer, QUALITATIVE EVALUATION OF FAMILY PLANNING PROPOSALS AND PROGRAMS: A SYSTEMS APPROACH (Carolina Population Center, Monograph 12, University of North Carolina).

⁴⁴MICHIGAN REPORT, *supra* n. 6, at 76.

⁴⁵See, i.e., the following proposals: Massachusetts, H.B. 5012 (1972); Michigan S.R. 251 (1972); California H.R. 110 (1972); Colorado S.R.11 (1972).

⁴⁶Nash, A., GOING BEYOND JOHN LOCKE? INFLUENCING AMERICAN POPULATION GROWTH, (Millbank Memorial Fund 14, 1971).

⁴⁷*Id.* at 25.

⁴⁸See, Reynolds, J., *Measuring the Demographic Effectiveness of Antinatalist Policies*, PROCEEDINGS OF THE GENERAL CONFERENCE OF

THE INTER. UNION FOR THE SCIENTIFIC STUDY OF POPULATION, at 343-58, (Leige, Belgium, 1973).

⁴⁹Tanner, J., and F. Mosteller eds., STATISTICS: A GUIDE TO THE UNKNOWN, at 304 (1972).

⁵⁰REPORTS ON POPULATION AND FAMILY PLANNING at 8 (Population Council, New York City, Oct., 1972).

⁵¹Hoogenboom, H., *Population Policy and Law*, CONCERNED DEMOGRAPHY, (Mar. 1972).

⁵²For an ongoing report of state population legislation see, FAMILY PLANNING/POPULATION REPORTER, (A review of state laws and policies published bimonthly by the Center for Family Planning Program Development, The Technical Assistance Division of Planned Parenthood World Population, 1660 L Street N.W. Washington, D.C. 20036).

⁵³For a thorough analysis of state laws and administration see forthcoming report, INFORMATION SUMMARY AND ANALYSIS OF STATE AND FEDERAL LAWS APPLICABLE TO THE DEVELOPMENT OF FAMILY PLANNING PROGRAMS prepared by the Center for Family Planning Program Development of Planned Parenthood World Population under the direction of Harriet F. Pilpel for the Department of Health, Education and Welfare, available from the Government Printing Office.

⁵⁴Colorado S.B. 230 (1971), introduced by Senator John R. Birmingham. For a discussion of legislation providing family planning services as well as legislation in each of the categories subsequently discussed in this article, see Cook R., STATE POPULATION LEGISLATION. Baldwin, C. ed., THE NEW ENGLAND REGIONAL CONFERENCE OF POPULATION, (N.Y. Population Council, June, 1973).

⁵⁵Tennessee S.B. 871 (1971).

⁵⁶Weinberg, D., *What State Governments Can Do*, FAMILY PLANNING PERSPECTIVES, Vol. II, No. 2 (Mar., 1970); Weinberg D., *State Administration and Financing of Family Planning Services*, FAMILY PLANNING PERSPECTIVES, Vol. 4, No. 2 (April, 1972).

⁵⁷Tennessee, S.B. 871 (1971).

⁵⁸Muller, C. and F. Jaffe, *Financing Fertility — Related Health Services in the United States 1972 - 1978: a Preliminary Projection*, FAMILY PLANNING PERSPECTIVES, 4:2:37, (Jan. 1972). The basic premise of this study is that underfinancing tends to create disincentives to birth control services for both providers and patients.

⁵⁹Colorado S.B. 417 (1973), introduced by Senator John R. Birmingham.

⁶⁰Michigan S.B. 1442 (1972); introduced by Senator Gilbert E. Bursley.

⁶¹California, S.B. 283 (1972), introduced by Senator Anthony C. Beilenson.

⁶²Colorado S.B.257, (1973) introduced by Senator John R. Birmingham et al. This law provides for wider distribution of condoms while insuring a safe product. The statute further requires that: "every unit package shall bear notation, printed in both English and Spanish, that the product should not be used more than 3 years after date of manufacture as shown on the package. Prophylactic vending machines shall contain only written advertising thereon in Spanish and English which shall only indicate the materials to be purchased, the price of said merchandise and the notice directing the purchaser to local venereal disease prevention services or clinics." S.B.257, §3 source L.47, §8 at 521; C SA C.78 §170(11) CRS 53 §66-10-2, 3, 4, 5, 6. For a more thorough analysis of laws and legislation affecting the sale, distribution and advertisement of non prescriptive contraceptive devices see Redford, M. and D.Praeger, THE BATELLE CONFERENCE PROCEEDINGS ON THE CONDOM, (forthcoming).

⁶³Virginia H.B. 69, (1972) introduced by Delegate Calvin W. Fowler et al.

⁶⁴Pilpel, H. and N. Weshsler, *Birth Control, Teenagers and the Law: A New Look*, FAMILY PLANNING PERSPECTIVES, Vol. 3 (July, 1971). See also Pilpel, H. and J. Zuckerman, *Abortion and the Rights of Minors*, 23 CASE W. RES. L. REV. 979 (1972).

⁶⁵Georgia H.B. 2072 (1972), introduced by Representative George Busbee, et al.

⁶⁶Alabama S.B. 664 (1972), introduced by Senator Cooper.

⁶⁷Washington S. R. 12, (1972) introduced by State Senator Peter Francis.

⁶⁸Kentucky S.B. 106 (1972) introduced by Senator C. Gibson Downing.

⁶⁹New Hampshire H.B. 95, (1973) introduced by Representative Elizabeth Greene.

⁷⁰Virginia H.B. 1095 (1972) introduced by Delegate William F. Reid.

⁷¹United States B. 898, (February, 1971) introduced by Senator Abraham Ribicoff.

⁷²California Assembly Bill 555, (Feb. 1972) introduced by Assemblyman Robert Cline.

⁷³For a more thorough analysis of land use and population see Lamm, R. and S. Davison, *The Legal Control of Population Growth and Distribution in a Quality Environment: The Land Use Alterna-*

tive, 49 DENVER L.J. 1 (1972) See also THE USE OF LAND: A CITIZEN'S GUIDE TO URBAN GROWTH (The Lawrence Ruckerfeller 1972). For an ongoing review of state land use legislation see LAND USE PLANNING REPORTS, published bi-weekly.

⁷⁴Florida S.R. 629 (Feb. 1972) introduced by Senator Robert Graham, et al.

⁷⁵MAINE REVISED STAT. ANN., Tit. 38, C.3, Art. 1, 6.

⁷⁶Land Use and Development Act, Vermont Legislature Act 250 (1970).

⁷⁷Under the Florida Law, the Governor and Cabinet are empowered to designate specific geographical areas as 'areas of critical state concern' and to establish principles to guide the development of each of those areas. To be an area of critical state concern, the area must (1) have environmental, historical, natural or archeological value of regional or statewide importance; (2) be an area where an existing or proposed major public facility will be located or major public investment made; or (3) be a proposed area of major development potential, such as a new community.

⁷⁸*Blueprint for Survival*, THE ECOLOGIST, (Jan. 1972).

⁷⁹Mass. (1973) H.B. 1901.

⁸⁰Doctor et al, CALIFORNIA'S ELECTRICITY QUANDRY: III SLOWING THE GROWTH RATE, (Rand Study R-1116-NSF/CSA Santa Monica California, Sept. 1972).

⁸¹This section on Institutional Design is based in part on Ackerman B. and J. Sawyer, *The Uncertain Search for Environmental Policy: Scientific Factfinding and Rational Decisionmaking Along the Delaware River*, 120 U. PA. L. REV. 419 (1972).

⁸²An argument to establish an optimum population size is made in SIZE CAN MAKE A DIFFERENCE (1970), written by the Advisory Commission on Intergovernmental Relations, Washington, D.C. The Report argued that after a certain size, it is probable that an urban area suffers diminishing returns to scale, making further increments in population inefficient. The report indicated the diseconomies of scale set in after population passes 250,000.

⁸³CALIFORNIA'S TWENTY MILLION, *supra* n. 3, at 427.

⁸⁴*Id.*, at 428.

⁸⁵*Id.*, at 426.

⁸⁶Hawaii S.R. 303 (1972).

⁸⁷COLORADO REPORT, *supra* n. 6, at 11.

⁸⁸TEXAS REPORT, *supra* n. 5, at 8.

⁸⁹Doctor, et al, *supra* n. 80.

⁹⁰Massachusetts H.B. 4420, (1973), introduced by Representative

Robert D. Wetmore, et al.

⁹¹New Hampshire S.J. R. (1973) introduced by Senator Eileen Foley.

⁹²Hawaii S.B. 37, (1973) introduced by Senator Kenneth F. Brown, et al.

⁹³See, Bergman, E., *The Evaluation of Population Policy: Some Missing Links*, (Prepared for the Rahovot Conference in Economic Growth in Developing Countries, Weizmann Institute of Science, Rehovot, Israel, Sept. 1973).

⁹⁴Campbell, D.T., *Reforms as Experiments*, AMERICAN PSYCHOLOGIST, 24:4:428:1, (Apr. 1969).

⁹⁵*Id.*, at 409.

⁹⁶*Id.*, at 428.

⁹⁷MICHIGAN REPORT, *supra* n. 5; CALIFORNIA'S TWENTY MILLION, *supra* n. 3, at 336.

⁹⁸MICHIGAN REPORT, *supra* n. 5, at 86.

⁹⁹CALIFORNIA'S TWENTY MILLION, *supra* n. 3, at 298.